

Surface Tension Report

Aim :

To discover which type of water will best adhere to a 100 yen coin.

How types of water solutions affect surface tension of water?

Hypothesis:

That the tap water will best stick to the Y100 coin

Tap water is predicted to have the strongest surface tension. Adding foreign particles into water would render it impure and disrupting the forces between water molecules

Independent variables:

Four *different water mixtures*

The four different water mixtures are: tap water,

The soap water is prepared by adding 20g of soap water into 200ml of water and then stirred.

The salt water is prepared by ...

Dependent variable:

The number of drops of the different water mixtures that a 100 yen coin can hold.

The number of drops of water the coin can hold before the water overflows

size of coin **is not the dependent variable** as measuring size of coin does not enable him to find out which type of water has the strongest surface tension

Controlled variable:

1. A dry 100 yen coin - **coin can be dried using hairdryer.**
2. **Coin will be placed on a flat surface**
3. **Drops will be administered 5cm vertically above from the centre of coin**

Materials/Apparatus:

dropper

bowl of water - **200 ml beakers - how many?**

100 yen coin

flat surface

hair dryer, paper towels

Method:

1. Put a 100 yen coin on flat surface
2. **At 5cm height vertically above from the centre of coin**, place tiny drops of **pure water using a dropper** on the 100 yen coin, counting each drop **till the water on the coin overflows.**

3. record the number of drops **excluding the drop that causes the water on the coin to overflow.**
4. Clean **the coin by rinsing it with tap water** and dry coin **using the hair dryer for 5 minutes.**
5. Repeat **steps 1 to 4 two more times to calculate an average.**
6. **Repeat steps 1 to 5 for soap and salt water.**

Data collection:

(put your table here. Include headings and units on the table)

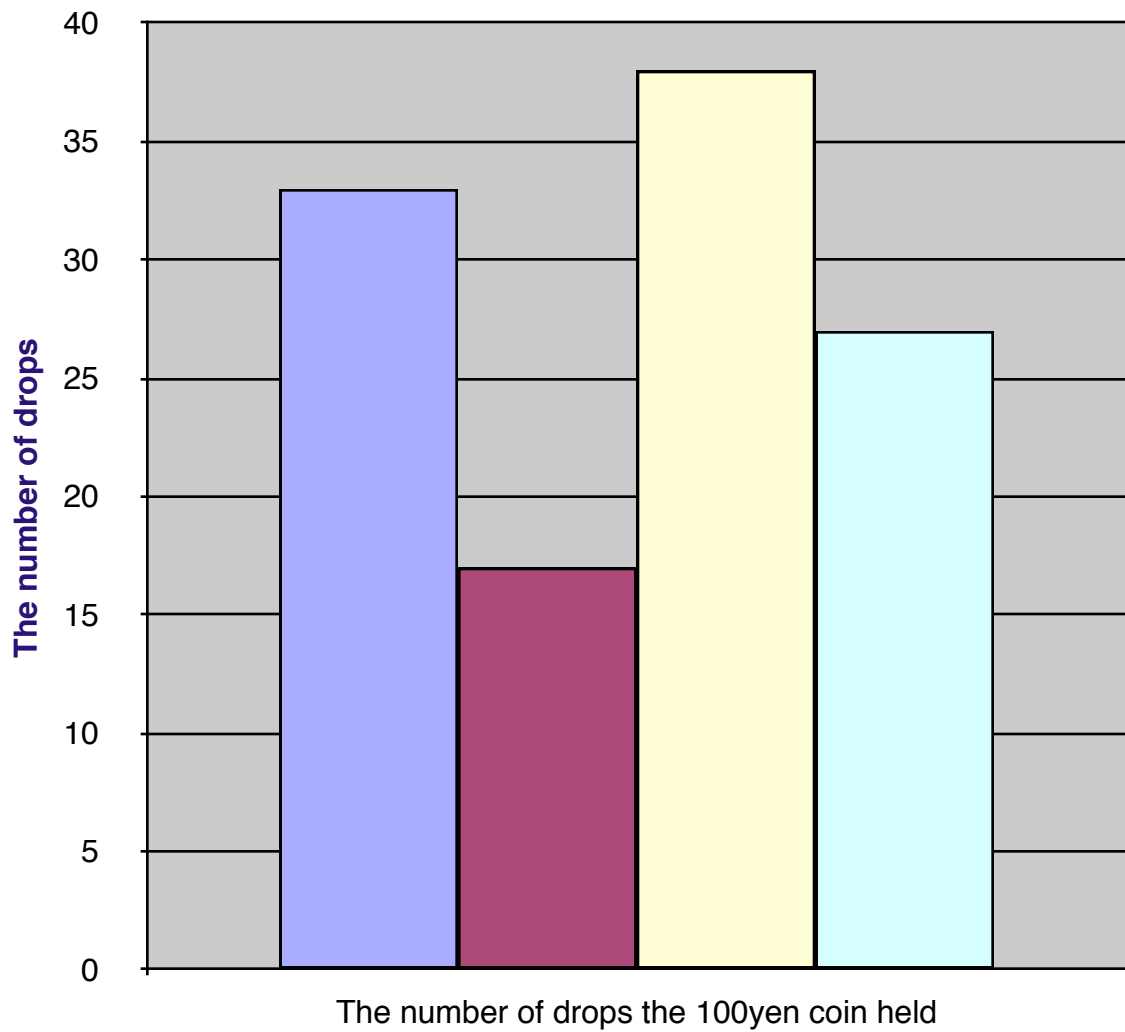
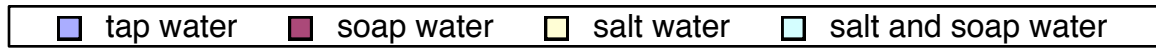
	number of drops
tap water	33
soap water	17
salt water	38

The table below shows

Type of water solution	number of drops			
	1	2	3	Average
tap water				
soap water				
salt water				

Data processing:

The graph below shows



Conclusion:

I think that the soap water held the least because it is the thickest.

The salt water has the strongest surface tension as it has the highest number of drops (38 drops) compared to tap water (33 drops) and soap water (17 drops).

This disagrees with my hypothesis.

Scientific understanding: The salt particles forms ionic bonding and may have strengthen the overall inter molecular forces between water or Adding salt particles changes the interactions between the water molecules and may have strengthened the forces between water molecules

Evaluation:

We could improve to be organized more. - **never as it is personal error.**

The method can be improved by making sure the coin is completely dry using the paper towel first followed by the hair dryer.

As the hand holding the dropper trembles slightly, it's impossible to hold the dropper completely stable at the centre of the coin. The retort stand and clamps can be used to hold the dropper steadily.